

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (previously presented): An image reading method which reads an image on an image recording medium by a visible light, comprising the steps of:

scanning a specified detecting light in a first direction using an optical path of the visible light and simultaneously reading the specified detecting light one-dimensionally in a second direction which is perpendicular to the first direction after a focusing position of the specified detecting light is set on a position of an optical element disposed in the optical path of the visible light, the focusing position being different from a position of the image recording medium;

determining from the read detecting light whether light quantity data of the one-dimensionally read detecting light contains a portion where the light quantity data changes at a reading position during the one-dimensional reading; and

detecting at least one of a foreign matter and a scratch on the optical element based on a result of the determining operation.

2. (canceled).

3. (previously presented): The image reading method according to claim 1, wherein the one-dimensional reading is performed by a line sensor.

4. (previously presented): The image reading method according to claim 3, wherein the scanning is performed by allowing the image recording medium and the line sensor to move relative to each other by transferring the image recording medium in relation to the line sensor.

5. (previously presented): The image reading method according to claim 3, wherein the scanning is performed by transferring a mirror reflecting the specified detecting light in the optical path.

6. (previously presented): The image reading method according to claim 1, further comprising the step of issuing an alarm, when at least one of the foreign matter and the scratch in the optical path is detected.

7. (canceled).

8. (previously presented): The image reading method according to claim 1, wherein the optical element is at least one of a diffusion plate and a mirror.

9. (previously presented): The image reading method according to claim 1, wherein a position of the optical element is changed in accordance with a detection result of at least one of the foreign matter and the scratch in the optical path.

10. (previously presented): The image reading method according to claim 1, wherein a detection area for detecting at least one of the foreign matter and the scratch in the optical path is adjusted.

11. (previously presented): The image reading method according to claim 1, wherein the specified detecting light is the visible light.

12. (previously presented): The image reading method according to claim 11, wherein, the image recording medium is removed from the optical path of the visible light, before the visible light is scanned.

13. (previously presented): The image reading method according to claim 1, wherein the specified detecting light is an invisible light.

14. (previously presented): The image reading method according to claim 1, further comprising the steps of:

reading the specified detecting light by scanning an invisible light; and
detecting, by the invisible light, the at least one of the foreign matter and the scratch on the recording medium.

15. (previously presented): The image reading method according to claim 14, wherein focusing positions of the specified detecting light and the invisible light are different from one another.

16. (previously presented): The image reading method according to claim 14, wherein the specified detecting light is identical to the invisible light, and wherein focusing positions of the invisible light are different from one another between the time when at least one of the foreign matter and the scratch on the optical element disposed in the optical path is detected by

the invisible light and the time when at least one of the foreign matter and the scratch on the image recording medium is detected by the invisible light.

17. (previously presented): An image reading apparatus, comprising:

a first reading unit for reading an image on an image recording medium by a visible light;
a second reading unit for scanning a specified detecting light in a first direction using an optical path of the visible light and simultaneously reading the specified detecting light one-dimensionally in a second direction which is perpendicular to the first direction after a focusing position of the specified detecting light is set on a position of an optical element disposed in the optical path of the visible light, the focusing position being different from a position of the image recording medium;

a first detecting unit which determines from the read detecting light whether light quantity data of the one-dimensionally read detecting light contains a portion where the light quantity data changes at a reading position during the one-dimensional reading, and which detects at least one of a foreign matter and a scratch on the optical element, based on whether the light quantity data contains the portion where the light quantity data changes at the reading position.

18. (canceled).

19. (previously presented): The image reading apparatus according to claim 17, wherein the second reading unit comprises a line sensor and a moving device for moving the specified detecting light in the first direction relative to the line sensor, and wherein the first detecting unit

detects at least one of the foreign matter and the scratch by detecting the change of the light quantity data in a line shape at a constant sensor position of the line sensor.

20. (previously presented): The image reading apparatus according to claim 19, wherein the second reading unit allows the image recording medium and the line sensor to move relative to each other by transferring the image recording medium in relation to the line sensor by means of the moving device.

21. (previously presented): The image reading apparatus according to claim 19, wherein the second reading unit scans the specified detecting light by transferring a mirror reflecting the specified detecting light in the optical path with the moving device.

22. (previously presented): The image reading apparatus according to claim 17, further comprising an alarming device for issuing an alarm when the first detecting device detects at least one of the foreign matter and the scratch in the optical path.

23. (canceled).

24. (previously presented): The image reading apparatus according to claim 17, wherein the optical element is at least one of a diffusion plate and a mirror.

25. (previously presented): The image reading apparatus according to claim 17, further comprising a first changing device for changing a position of the optical element when the first detecting unit detects at least one of the foreign matter and the scratch in the optical path.

26. (previously presented): The image reading apparatus according to claim 17, further comprising an adjusting device for adjusting a detection area for detecting at least one of the foreign matter and the scratch in the optical path.

27. (previously presented): The image reading apparatus according to claim 17, wherein the first detecting unit uses the visible light as the specified detecting light.

28. (previously presented): The image reading apparatus according to claim 27, wherein the image recording medium is removed from the optical path of the visible light, before the second reading unit reads the visible light.

29. (previously presented): The image reading apparatus according to claim 17, wherein the first detecting unit uses an invisible light as the specified detecting light.

30. (previously presented): The image reading apparatus according to claim 17, further comprising a second detecting unit for detecting at least one of the foreign matter and the scratch on the image recording medium by the invisible light.

31. (previously presented): The image reading apparatus according to claim 30, further comprising a second changing device for changing focusing positions of the specified detecting light and the visible light in accordance with whether at least one of the foreign matter and the scratch in the optical element is detected by the invisible light or at least one of the foreign matter and the scratch on the image recording medium is detected by the invisible light.

32. (previously presented): The image reading apparatus according to claim 30, wherein the first detecting unit and the second detecting unit are identical to each other, the image reading apparatus further comprising:

a second changing device for changing focusing positions of the invisible light in accordance with whether at least one of the foreign matter and the scratch is detected by the invisible light on the optical element or on the image recording medium.

33. (previously presented): A method of discriminating a defect of image data produced from an image which has been formed on an image recording medium, comprising:

a first detecting step of detecting a first optical defect existing on an optical element disposed in an optical system which reads the image data from the image recording medium; and

a second detecting step of detecting a second optical defect existing on the image recording medium;

wherein the first and second detecting steps are performed using an invisible light; and

wherein, in the first detecting step, a focusing position of the invisible light is set on the image recording medium, and in the second detecting step, the focusing position of the invisible light is changed from the image recording medium.

Claims 34-38. (canceled).

39 (previously presented): The method of claim 1, further comprising changing a position of the specified detecting light to the recording medium to determine a defect portion on the recording medium.

40 (previously presented): The apparatus of claim 17, further comprising focusing changing means for changing the focusing position of the specified detecting light between the optical element and recording medium.

41. (curently amended): The image reading method according to claim 1, wherein ~~wherein~~ the optical element on which the focusing position is set is an element disposed on a midway of the optical path to a reading position of the specified detecting light ~~light~~.

42. (currently amended): The image reading apparatus according to claim 17, wherein the optical element on which the focusing position is set ~~et~~ is an element disposed on a midway of the optical path to a reading position of the specified detecting light.